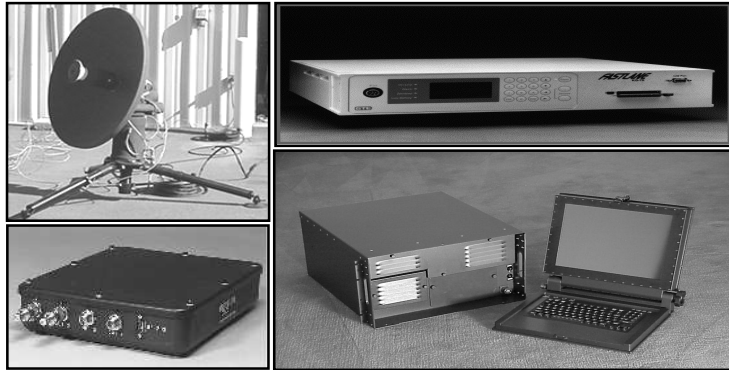


GLOBAL BROADCAST SERVICE (GBS)



The Global Broadcast Service (GBS) will augment and interface with other communications systems and provide a continuous, high-speed, one-way flow of high-volume data, audio, imagery, and video information streams at multiple classification levels to deployed and garrisoned forces across the globe.

GBS consists of a space segment, fixed and transportable transmit suites, and fixed and transportable receive suites. The space segment of the current phase of GBS consists of four GBS transponders on each of three Ultra High Frequency Follow-On (UFO) satellites and leased commercial satellite transponders as required to meet demand. Transmit suites build broadcast data streams from various sources of information, including command, weather, and intelligence agencies and commercial television programming. They manage the flow of selected information through the uplink broadcast antenna to the orbiting satellites for broadcast to the appropriate theaters of operation. The receive suites extract the appropriate information for distribution by existing systems to the appropriate end users within selected areas of operation.

BACKGROUND INFORMATION

The GBS acquisition strategy was conceived as a three-phase program based on an evolutionary system design supported by commercially available technology. The program is currently in Phase II. GBS Phase I, conducted from FY96 to FY98, was used to develop the user requirements and concepts of operations. GBS Phase II, scheduled for completion in FY06, will develop near-worldwide GBS core operational capability and further refine operational requirements and employment concepts. GBS Phase III, scheduled to begin in FY06, is being addressed as part of the Advanced Wideband System (AWS) program.

Technical problems with transmit suite software and transportable and fixed receive suite design and subsequent program delays led to a JROC decision to defer a small subset of capabilities, field the system with non-deferred capabilities, and then incrementally field upgrades until all the ORD thresholds are met. Commercial technology that can assist in satisfying the deferred capabilities is now becoming available, but this could require some significant changes in the system architecture.

The system was incrementally fielded with successive software builds during FY01. The deferred capabilities of full broadcast history, classified video, and remote enable will be fielded in two

additional builds with an IOC for this upgraded capability projected for 4QFY02. Finally, the more lightweight rugged Transportable Ground Receive Station (TGRS) configuration will be released in FY03, with an IOC for this configuration projected for 4QFY03.

TEST & EVALUATION ACTIVITY

An updated Phase II TEMP is in coordination that reflects the incremental fielding and testing requested by the JROC and the May 2001 revised Operational Requirements Document (ORD). AFOTEC has briefed DOT&E on the operational test approach. A Combined Test Force was formed to coordinate the planning of all GBS testing. Combined DT/OT #1 was conducted in January 2001 at contractor and government developmental facilities on the U.S. east coast. Contractor developmental test events have included factory acceptance tests, Satellite Broadcast Manager (SBM) site acceptance tests, Y2K tests, shipboard receive suite tests, and on-orbit tests of UFO satellites 8, 9, and 10. DT/OT #2 was conducted in June 2001 in the Pacific Theater.

TEST & EVALUATION ASSESSMENT

During DT/OT #1, the SBM was successful in building daily broadcast schedules and beam plans as well as in broadcasting video, audio, and File Transfer Protocol (FTP) classified and unclassified products. However, the Transmit Planning and Scheduling (XPS) software was immature and several problems were identified for correction. The Receive Broadcast Managers (RBMs) were able to receive video, audio, and FTP classified and unclassified products. However, there were observed inconsistencies with product reception successes among RBM sites. In general, all RBM sites were able to maintain good signal lock during Ka and Ku broadcasts; however, there were serious observed failures with scheduled product reception.

The SBM software used in DT/OT #2 was vastly improved from its performance during DT/OT #1; however, it was still immature and several new deficiencies were identified. The RBMs were able to receive video, audio, and FTP secret, ROKUS, and unclassified products. DT/OT #2 and DT/OT #1 were very similar in that, at both test events, an inconsistency with product reception success was observed throughout the test sites.

Looking ahead to MOT&E, users need to finalize their CONOPS before the GBS system will be able to enter testing. AFOTEC will not test without a CONOPS. Additionally, the program office must ensure timely installation of the Key Performance Parameter required satellite beam control terminal at the Sigonella SBM prior to MOT&E.